

CLAIMS

1. A negative pressure utilization type of slider comprising:

5       a head for performing recording on a disk or reproducing from the disk; and

          an air bearing surface formed in a surface facing the disk by a plurality of generally flat surfaces for floating from the disk by an air flow caused by rotation of the disk, the  
10       generally flat surfaces differing in height from each other,

          the air bearing surface having an air inflow surface, a positive pressure generating surface and a negative pressure generating surface respectively formed in this order from an air flow incoming side, wherein

15       the air inflow surface has a groove configuration surface formed from the disk inner peripheral end to the disk outer peripheral end of the air inflow surface, the groove configuration surface being lower in height than the air inflow surface.

20       2. A negative pressure utilization type of slider comprising:

          a head for performing recording on a disk or reproducing from the disk; and

          an air bearing surface formed in a surface facing the disk  
25       by a plurality of generally flat surfaces for floating from the disk by an air flow caused by rotation of the disk, the generally flat surfaces differing in height from each other,

          the air bearing surface having an air inflow surface, a positive pressure generating surface and a negative pressure  
30       generating surface respectively formed in this order from an air flow incoming side, wherein

          the air inflow surface has a groove configuration surface formed to extend from a disk inner peripheral end toward a disk outer peripheral end of the air inflow surface, the groove

configuration surface being lower in height than the air inflow surface.

3. A negative pressure utilization type of slider comprising:

5       a head for performing recording on a disk or reproducing from the disk; and

          an air bearing surface formed in a surface facing the disk by a plurality of generally flat surfaces for floating from the disk by an air flow caused by rotation of the disk, the  
10       generally flat surfaces differing in height from each other,

          the air bearing surface having an air inflow surface, a positive pressure generating surface and a negative pressure generating surface respectively formed in this order from an air flow incoming side, wherein

15       the air inflow surface has a groove configuration surface formed to extend from the disk outer peripheral end toward the disk inner peripheral end of the air inflow surface, the groove configuration surface being lower in height than the air inflow surface.

20       4. The slider according to any one of claims 1 to 3, wherein the air bearing surface has surfaces of three stages differing in height, the surfaces of the three stages comprising an upper stage surface highest in height, a lower stage surface lowest in height and a middle surface lower than the upper stage surface  
25       and higher than the lower stage surface, the positive pressure generating surface, the air inflow surface and the negative pressure generating surface being formed on the upper stage surface, the middle surface and the lower stage surface, respectively.

30       5. The slider according to any one of claims 1 to 3, wherein the groove configuration surface is formed flush with the negative pressure generating surface.

          6. The slider according to any one of claims 1 to 3, wherein the air inflow surface extends to the air flow incoming end.

7. The slider according to any one of claims 1 to 3, wherein the groove configuration surface is distant from the air flow incoming end by at least 20  $\mu\text{m}$ .

5 8. The slider according to any one of claims 1 to 3, wherein the groove configuration surface has a width of at least 30  $\mu\text{m}$ .

9. The slider according to any one of claims 1 to 3, wherein the head is a magnetic head.

10 10. The slider according to any one of claims 1 to 3, wherein the reproducing head is composed of a magnetoresistive element.

11. The slider according to any one of claims 1 to 3, wherein the air bearing surface has an area of not more than 1  $\text{mm}^2$ .

12. The slider according to any one of claims 1 to 3, wherein the air bearing surface has an area of not less than 0.5  $\text{mm}^2$ .

15 13. A disk device including the slider according to any one of claims 1 to 3.

14. The disk device according to any one of claims 1 to 3, further including means for recording, reproducing or both recording and reproducing in a disk region where a relative speed between the slider and the disk is not higher than 10 m/s.

15. The disk device according to any one of claims 1 to 3, further including means for recording, reproducing or both recording and reproducing in a disk region where a relative speed between the slider and the disk is not higher than 7 m/s.